

# EOSINT M enables product optimization with advanced materials and design concepts

## Project summary

### Requirements:

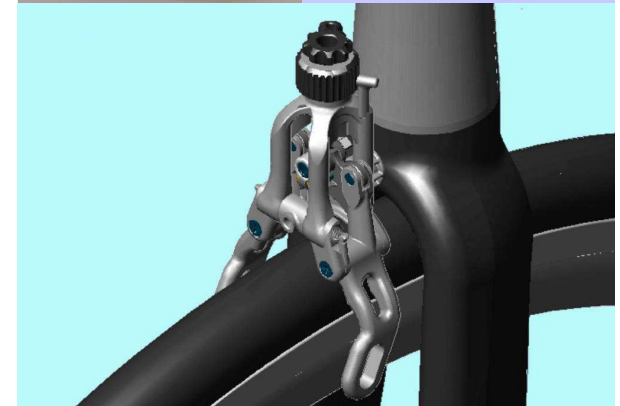
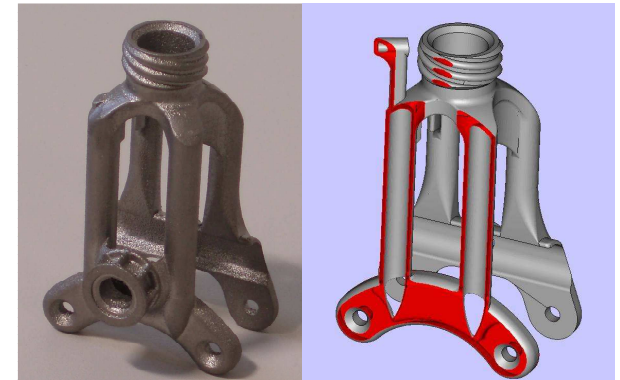
- high performance brake assembly for a competition bicycle
- optimal braking capability, combined with light weight

### Solution:

- DMLS with EOSINT M 270 IM Xtended
- lightweight Ti6Al4V material combined with hollow structure

### Result:

- significantly improved braking performance
- huge time and cost saving compared to casting



Top: thin-walled brake component built in Ti6Al4V on EOSINT M 270 IM Xtended.

Bottom: schematic of assembly

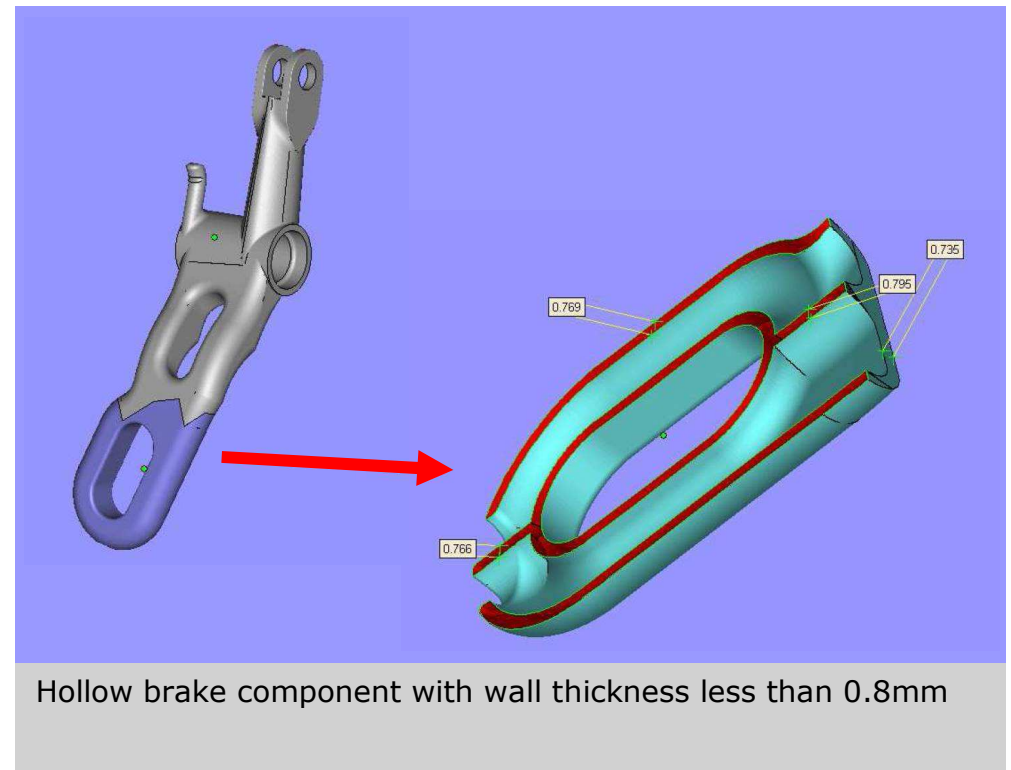


e-Manufacturing Solutions

# Design optimization for e-Manufacturing – hollow structure saves material and improves performance

## Design details

- Dimension, weight and engineered design allow the cyclist to gain 6-7 meters at full speed before actually braking (probably more in wet road conditions)
  - hollow design causes brake to operate in a vibrating mode, giving rise to something similar to the ABS in the car)
- With EOSINT M 270 IM Xtended, hollow and thin-walled structures can be produced quickly and efficiently



e-Manufacturing Solutions

# EOSINT M offers rapid production of high-performance parts

## Production details

- Machine:
  - EOSINT M 270 IM Xtended
- Material:
  - EOS Titanium Ti64
- Layer thickness:
  - 30 microns
- Build time:
  - approx. 11 hours for one set
- Post-processing:
  - just support removal and shot-peening

